GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

Office: Tribune Building, New York.

Conducted by . . . . . Professor C. S. Sargent.

ENTERED AS SECOND-CLASS MATTER AT THE POST OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, MARCH 21, 1894.

TABLE OF CONTENTS.

PAGE.

Editorial Article:—Lumberman and Forester 111
Botanical Notes from Texas.—XVI. ..... *E. N. Plank.* 112
The Earliest Flowering Shrubs. ..... *J. G. Jack.* 112
Foreign Correspondence:—London Letter ..... *W. Watson.* 113
New or Little-known Plants:—Ostrya Knowltoni, a new species of Hop Hornbeam. (With figure.) ..... *Frederick Vernon Coville.* 114
Cultural Department:—The Best Varieties of Vegetables ..... *R.* 116
Snowdrops ..... *J. N. Gerard.* 117
Currants for Market ..... *S.* 118
The Earliest Flowering Shrubs ..... *Joseph Meehan.* 118
Correspondence:—A Plea for Wild Flowers ..... *B. L. Putnam.* 118
March in a West Virginia Garden ..... *Danske Dandridge.* 118
Notes from a Northern Garden ..... *H. A. Fortuine.* 119
Recent Publications 119
Notes 120
Illustration:—Ostrya Knowltoni, Fig. 23 115

Lumberman and Forester.

WHEN an American lumberman attacks a forest his aim is to cut and market all the lumber he can profitably handle. Since our original forest-area was practically unlimited it was not reasonable to expect that the men who have felled our forests should regard the future of the woods in which they operated, for when they had finished one tract they could begin work in another. Naturally, the American lumberman has developed great skill in handling forest-products, and since nothing has been allowed to stand in the way of his immediate profits, a forest which he has once cut over and abandoned is a picture of desolation. This ruinous work, however, cannot be justly counted blameworthy; it was the necessary outcome of simple, natural conditions, although the waste, as we now look back upon it, has been calamitous. We ought to remember, too, before we pronounce this extravagance criminal that in many parts of the country our agriculture, and in some places our mining, has been carried on after the same prodigal fashion.

The science of forestry, on the other hand, has been developed in countries where the supply of timber has been limited and where it has been recognized as essential that the productive powers of the forest should not be diminished, but increased, if this were in any way possible. Instead of cutting everything which he can market with a profit, the forester cuts only such trees as ought to be removed when their present value is considered in connection with the future welfare of the woods, and the trees which are selected for removal are so treated in cutting and carrying as to do the least possible injury to the young growth that remains. The time has certainly come when this forward-looking forest-policy ought to prevail in our own forests, even where the production of lumber is their only value; but in a case like that of the North Woods, where the importance of the forest as a conservator of the water-supply is paramount, plans for preserving a continuous forest-cover for the future should not be embarrassed for a moment by any considerations looking to immediate revenue from the sale of lumber.

These different attitudes toward the forest assumed by the lumberman and the forester, made the subject of an instructive address by Mr. Gifford Pinchot, at the late Forestry Congress at Albany, and we are glad that the paper has had a wide circulation by publication in *The Tribune* of this city and in other newspapers. Mr. Pinchot showed how the forester, by adapting natural processes to the use of man, could make the forest a permanent resource by successive renewals within reasonable periods, and yet he explained that in order to do this effectually the forester needed the co-operation of the practical lumberman. The forester's duty is plainly to lay out a general plan and to decide as to the location and amount of every year's cut. The trees for cutting should be selected under his supervision, although much of this marking can be done by a lumberman who has received a sufficient schooling in forestry to enable him to grasp the spirit of forest-management. The lumberman's training will enable him to have all transportation facilities in good order and to see that the work of felling is done in accordance with the forester's instructions, and, in short, will enable him to take direct charge of all practical work in the woods. When such sympathetic co-operation between the two crafts is secured, the forester is relieved of the burden of practical details which can be laid on the shoulders of the lumberman, who is the one man with adequate training to carry out his instructions. Meanwhile, the forester is left free to study and devise plans for forest-management on broad, scientific principles.

Of course, Mr. Pinchot believes that restricted lumbering in the North Woods would be better than lumbering without any restrictions, but yet he feels that the twelve-inch limit fixed by the New York law, and of which we spoke a fortnight ago, is not a sufficient safeguard against danger to the forest-cover. The man who buys the stumpage on state lands, even when he does not cut trees as small as twelve inches in diameter, takes little precaution as to the injury he does to the young growth, and Mr. Pinchot has proved in North Carolina that precautionary measures which did not add more than two or three per cent. to the cost of felling and handling trees made an improvement of ninety-five per cent. in the condition of young trees after the old ones were cut down. Under the existing law no provision is made for replacing timber by equally valuable species, and the constant removal of conifers, which are at best making an up-hill fight against the encroachment of the hard-woods, will finally exterminate them, and thus ruin the principal source of revenue which it is possible for the state to derive from the woods for a long time.

A summary of the whole situation in the Adirondacks can best be given in Mr. Pinchot's own language:

In conclusion it may be said that for many reasons the Adirondacks are peculiarly well suited to forest-management. The soil is excellent, from the standpoint of tree-growth, but of little value for any other purpose. The young growth of the valuable species of trees, with the single important exception of White Pine, is always sufficiently, and often exceedingly, abundant. The small proportion of the valuable soft-wood trees makes it possible for forest-management to make, from the very start, almost as large a return in money as lumbering; and the balance must change soon and permanently to the other side of the account. The great interests which are involved in the maintenance of the water-supply are fully protected under forest-management, which is not the case under any form of lumbering, however restricted in the size of the trees which it may cut. The protection of fish and game falls naturally to the forester, whose training and traditions both fit him peculiarly for such work. In all countries where forestry has become established, the functions of forester and game warden are combined. Finally, the general character and very uniform composition of the North Woods are admirably adapted to the operations of forest-management. In other words, Nature's process of handling the forest, which must guide the forester and dictate his methods, needs very little variation to respond completely to all the different demands which, as a civilized community, we can make upon the forest. There is no forest of equal area in this country from the management of which more useful, more immediate, or more lasting and assured results can be obtained.

Botanical Notes from Texas.—XVI.

EAGLE LAKE lies about half a degree west of the ninety-sixth meridian and a little south of the thirtieth parallel. It is about three miles long, and its greatest width is about one-half that distance. Texas and Kansas and the intervening country have no lakes like those of the north and of the east. Along the coast so-called lakes are obstructed bayous, and inland lakes are merely deeply cut portions of former river-beds, or they are "washouts" made at times of unusual floods.

Our little lake is a very shallow body of water. Its origin probably dates from the time when the waters of the Gulf extended up to this point. Old Caney Bayou, now nearly filled, was later its southern extension. A large "draw," as some western people call a usually dry depression that nature has formed in the upland prairies to relieve them of their surplus water, pours into the head of the lake, in times of heavy rains, the drainage of quite an extent of country. The action of the winds and of the waves would naturally limit, as well as deepen, the waters of the lake. The lake is said to be well stocked with fish, and alligators abound in it.

We are now so far eastward that most south-western plants, whose company we have for months enjoyed, have been left behind, though a few of them still keep our company. The waters of the lake at present are mostly hidden by huge forms of Nelumbo lutea and of various Sedges and Grasses. In the shallower places forms of Sagittaria abound, while Heteranthera reniformis fringes the space. A large Castalia, with handsome white flowers, abounds in the lake. Whether it be Castalia ampla or Paine's Castalia I have not yet determined. Either species in Eagle Lake would be widely out of its hitherto reported range. The homely, but interesting, Nymphæa advena grows with it, and the peculiar little Cabomba Caroliniana is common, floating where it can find open water. Its centrally peltate, elliptical, emersed leaves, so different from its large, finely dissected, immersed ones, lead readily to a recognition of the species. Its small flowers are white. I have not seen Cabomba elsewhere in Texas.

Saururus cernuus, Lizard's-tail, so common northward and eastward, is here growing in the water or near it. In shallow water grows commonly a tall pubescent Ludwigia with pale yellow flowers. Also in the lake and near it Mikania cordifolia (?) garlands with its leaves and flowers tall-growing Button-bush and other shrubs.

In damp places on the near-by prairies the handsome Cooperia Drummondii is common, and extending northward into the "Territory." With Cooperia there often grows a good-looking plant of distant kin to it, Zephyranthus aurea. We should expect to see Rubus trivialis, with its trailing stems sometimes twenty feet long, growing near the lake, and R. cuneifolius is also here. These species give to Texas people their blackberries. In drier places grows Petalostemon obovatus, bearing long thick spikes of yellowish flowers by which the species may easily be known. P. multiflorus is also here. The curious Brunnichia cirrhosa, clinging by tendrils and ascending trees to a height of twenty or more feet, is not uncommon near the lake. It is a member of the Buckwheat family, and extends northward at least to Missouri. Cissus stans is found in great abundance. Its congener, C. incisa, bears it company. The leaflets of the last-named species unjoint so readily that it is difficult to make a good herbarium specimen of it—a fact also noticed long ago (see *Synoptical Flora*, vol. i.) The eastern Partridge-berry, Mitchella repens, has located near Eagle Lake, and, as some people are said to do on coming to Texas, our plant has dropped its northern common name and assumed the name of Turkey-berry.

Tecoma radicans is common about the lake. It often becomes a vile weed in the corn and cotton fields of southern Texas. T. stans grows rarely in this vicinity. It sometimes manages to get along and prosper with a less number of leaflets than its cousin carries, so it is contented to stand erect without attempting to climb. Its flowers, which in form resemble those of T. radicans, in color are yellow. Cassia occidentalis, a tropical species, abounds everywhere in southern Texas. It is a strong-growing plant, with an ill odor. It becomes six or more feet tall. The ovate sharply pointed leaflets are borne in four pairs. Its pods curve upward, becoming nearly erect; they contain from thirty to fifty or more seeds. C. Tora, also a southern species, is, in eastern Texas, extending through the other Gulf states, a shorter and a handsomer plant than the first-named species, with three pairs of smooth, obovate leaflets, which are sensitive. Its long curved pods contain from twenty to thirty seeds. Jaquemontia tamnifolia, an adventurer from the tropics, is so rarely found here that I have seen only a single specimen. It is a member of the Morning-glory family. Usually low and erect, it is diposed to climb when a support is at hand. The terminal clusters of bluish flowers are involucrate. Passiflora incarnata is here, and so are the high-climbing Berchemia scandens, Cocculus Carolinus, the large-leaved Smilax hispida, and Ampelopsis quinquefolia, Virginia Creeper. The creeping Hydrocotyle Asiatica, like most of its North American congeners, grows commonly in southern Texas. It forms a part of the flora of Eagle Lake. The species is nearly cosmopolitan in its range. Its thickish clustered leaves are not peltate, but are ovate-cordate and an inch or more long. The few flowers are purplish, succeeded by the thick fruit, which is large for the species.

Kansas City, Kansas. *E. N. Plank.*

The Earliest Flowering Shrubs.

THE peculiar prevailing colors of the flowers of the earliest blooming shrubby plants must be remarked by every one. Yellow seems the predominant hue, but we have some species in which some form of red is characteristic, and a few in which the blossoms are white. The flowers of most of the very earliest species are individually small, but as they are often very numerous they may be quite conspicuous in the aggregate. Some of these species are of little value from a horticultural standpoint, although individually and structurally they are quite as beautiful as those which are more showy.

Most of these precocious kinds are very simply adapted for cross-fertilization. Among the hardy, very early, yellow-flowering shrubs there is none of such horticultural value as the Cornelian Cherry, Cornus mas, not infrequently to be found under the name of Cornus mascula. It is thoroughly hardy in this climate, and will thrive in almost any situation if the soil is not sour or water-soaked. Although a native of a large portion of Europe and of northern Asia, and cultivated for centuries, it must be considered as yet an uncommon shrub in American gardens. While usually regarded as a shrub, it may in time assume the proportions of a small tree, fifteen feet or more in height and with as great a spread of branches. It will grow pretty rapidly for a dozen years or more, but later the growth is much slower. Given plenty of room, it will grow into a fairly symmetrical form with little or no pruning, and blossom regularly every year. The umbels of little yellow flowers are borne on opposite sides of the branchlets of two seasons' growth. As the bud-scales separate in the warm spring days, and expose the yellow flower-buds within, the plants have the appearance of being in bloom for a good while before the blossoms are really open and the pollen ripe. Of course, the time of blooming varies with the seasons, but a dry, warm and sheltered position or cold or wet soil and a chilly exposure may make a difference of ten days in the time of opening of buds among plants in the same region. While the plants appear in blossom for some time before any flowers are really open, the following dates refer to the actually expanded petals and ripe pollen as noted in the vicinity of Boston: In 1888 a plant in a rather cool situation bore open flowers April 26th; in 1889 and 1891, on April 13th; in 1890, large plants on the Public Garden in Boston were reported in flower March 15th, and were noted with open blossoms on April 3d in a less sheltered situation, and in 1892 first open flowers were observed April 3d, and were probably earlier in sheltered places. The flowers remain a conspicuous feature for two or three weeks, after which the last of them fade away, and the branches become covered with clean green foliage, which does not seem liable to injury by insect or fungus diseases. I know of no borers which affect the wood, which is remarkable for its hardness and durability. New plants may be most easily propagated by layering and by suckers, and grafting is often resorted to by nurserymen. Seeds usually do not germinate until the second year they are in the ground, and plants raised in this most natural way are much longer in coming to a flowering age than individuals propagated by any one of the modes of division. While the plants are young the flowers are rarely ever fruitful, but as they grow old they produce fruit in more or less abundance, although but a very small proportion of the innumerable blossoms fructify. The fruit is usually of a bright scarlet or cornelian-red color, is somewhat of the size and shape of some of our common acorns, and when thoroughly mature is not unpalatable. On account of the oval or oblong shape of the fruit it is sometimes known by the name of Long Cherry. Flowering buds cut in winter and placed in water in the house will blossom very well in a few days.

The Japanese Witch-hazel, Hamamelis Japonica, when first introduced into the Arboretum, gave promise of surpassing all other shrubs in the earliness of its bloom, the buds opening in mild days in midwinter. During the past two or three years,

however, the bloom of this plant here has proved a disappointment, inasmuch as the buds seem to become blighted and brown during the winter and do not properly expand when they are expected to. This trouble may be purely local or unusual, and the plant is well worth testing by all who admire the interesting yellow bloom of our native Witch-hazel in the autumn, and would like to have similar flowers in the very early spring. The plant is perfectly hardy in this climate and requires no unusual treatment to be grown successfully. This year the plant showed some good flowers here on the 12th of March. Like Cornus mas, this Witch-hazel is likely to grow to a considerable size and may be called a small tree instead of a shrub.

With the exception of the true Hazels, or species of Corylus, which develop their gray and yellow catkins of sterile flowers at about the same time, we have no native yellow-flowering shrub which bears flowers so early as the Leatherwood, Dirca palustris. While it may not be called a showy plant, in the horticultural sense, its blossoms are, nevertheless, very interesting, and on good healthy plants are sufficiently abundant to make the little shrub quite attractive, while the buds of many others still appear dormant. It is an unobtrusive little plant of slow growth, of compact bush or miniature tree-like form when grown singly or straggling, when growing among other larger shrubs or under the shade of trees. It is quite as deserving of a place in the garden as the Witch-hazel. At the Arboretum it was noted as putting forth first flowers about April 21st in 1888, April 15th in 1889, April 7th in 1890, on the 13th of the month in 1891 and 1893, and on the 6th in 1892.

Among the earliest flowering shrubs having red flowers, the European Daphne Mezereum is probably the best-known and most valuable for the garden. So precocious are its peculiar rose-colored blossoms that some of them may occasionally open in the autumn, some may open during mild periods in midwinter, and the plant may be found showy with bloom before any of the buds of Cornus mas have opened. This little shrub is quite hardy here, but sometimes its buds are injured by frequent freezings and thawings, and the blossoms do not develop well. The fruit is of a bright red color when ripe, and it matures by midsummer, when the plants are again conspicuous for a time.

A little Heath, Erica carnea, may also begin blossoming in the late autumn, and its small rose-colored corollas keep fresh under the snow, so that the plant is provided with fresh-looking flowers in the very first warm days and with buds which continue to open. This little plant needs some protection in this latitude in order to give the best satisfaction.

Of the early white-flowering shrubs, Andromeda Japonica is probably the first to open any of its pretty urn-shaped blossoms, which are borne in large compound pendulous racemes. If exposed to the sun in winter the buds are liable to great injury, so that the plants do best in partial shade, and they should be protected by leaves and evergreen boughs in winter as they cannot be counted satisfactorily hardy in this climate.

Perfect flowers of the Japanese Andromeda are larger and more beautiful than those of our native Andromeda floribunda of the Alleghany Mountains, which, however, is, on the whole, a better plant for our northern gardens. Its dark evergreen, compact foliage is also much handsomer than that of its Japanese congener. While its flowers are smaller, they are borne in great abundance. They seem scarcely ever injured in winter, and in warm situations the buds are hardly behind A. Japonica in opening in early spring. Besides growing from seeds, these plants may be readily propagated by layers, which, if properly made, will form roots and independent plants in the course of a year.

A Honeysuckle, Lonicera Standishii, bears a few very early small white flowers, which, although not showy, are interesting for the sweet fragrance which they exhale. The earliest flowers are produced, as a rule, on branches nearest the ground, and they usually expand by the middle of April or earlier. L. Standishii is hardier than L. fragrantissima, which resembles it in many respects, especially in its blossoms, which are equally early. As these Honeysuckles come into full bloom the first flowers of many other shrubs begin to develop, and the list of early-flowering species rapidly enlarges.

There are several shrubs with inconspicuous flowers which are among the earliest to bloom, and of these the rare little Corema Conradi, with small dull purplish flowers, and the native Yew may be mentioned. But the bloom of these is not of much interest to the horticulturist.

There are one or two species of shrubby Willows which show true blossoms quite early, but most of the early species expose their gray catkins long before they are truly in flower, although in the popular mind the appearance of the catkin is often taken as synchronous with bloom.

Perhaps the Forsythias should be mentioned among the earliest flowering shrubs, because the flowers open on the stems which trail on the ground where the buds first feel the effect of the warm sunshine almost as early as those of Lonicera Standishii. In this latitude it is advisable to bend over Corylopsis pauciflora and cover the branches with soil during the winter, so that its flowering is delayed. In latitudes south of this, where the plant does not require such protection, it makes a profuse display of its pale yellow flowers at the same season.

Arnold Arboretum. *J. G. Jack.*

Foreign Correspondence.

London Letter.

CIRRHOPETALUM ROBUSTUM.—This is one of the most remarkable of the newer tropical Orchids in cultivation at Kew. It differs from other species of the genus in having the pseudo-bulbs crowded close together as in Odontoglossum crispum, instead of springing at intervals from a creeping rhizome. It is also remarkable for the extraordinary size of its pseudo-bulbs and leaves, the former being three inches long and two inches wide, and the leaves, which are thick and leathery, a foot long and four inches wide. The Kew plant is a large one, in fine health, but it has not yet flowered. A plant of it flowered, however, last April with Colonel Trevor Clarke, of Daventry, whose nephew, Captain Clarke, had brought it from New Guinea three years previously. The flowers are as remarkable as the leaves, as the following notes from the description published in the *Orchid Review* last year will show: Scape very stout, a quarter of an inch in thickness at the base, bearing eleven flowers and a few undeveloped buds at the apex. Umbel seven inches across; bracts an inch long; sepals about two inches long, greenish yellow, reddish purple at the base; petals half an inch long, paler than the sepals; lip fleshy, recurved, cordate-oblong, nearly half an inch long, with a pair of stout teeth, and colored deep red-purple; column dull yellow. The plant which produced the inflorescence here described had leaves only half as large as those recently produced at Kew, and the scape and flowers may be correspondingly larger. The genus Cirrhopetalum has received a fair share of attention in recent years, and of the forty or so species described twenty-five are in cultivation at Kew. The best of these are C. Collettii, C. fimbriatum, C. Makoyanum, C. Macraei, C. Medusæ, C. ornatissimum, C. picturatum and C. robustum. They all thrive when grown in baskets suspended near the roof of the hottest and moistest of our stoves.

CYCNOCHES LODDIGESII.—The charm of the genus Cycnoches is largely due to the length and shape of the column of the flower, and in none of the species is this character so conspicuous as in C. Loddigesii, which flowered at Kew in May last year, and is flowering again now. The plant is like the better-known C. chlorchilon in habit, and the raceme, number and size of the flowers are somewhat similar to that species. Their color is, however, quite different, being greenish brown, with blotches of dark brown, and the lip white and yellow, with red spots. The column is about three inches long, gracefully curved in the form of a half-circle, with wings near the apex, which is inflated, and, as was pointed out by Sir William Hooker, bears a striking resemblance to the head of a cobra. The odor of the flower is as pleasant as vanilla. All the Cycnoches like plenty of heat and moisture when growing, to be followed by a short resting period in a drier atmosphere.

LÆLIO-CATTLEYA PITTIANA.—This is a new species or natural hybrid which has lately flowered with Messrs. F. Sander & Co., and is named, described and figured in the *Gardeners' Chronicle* this week. Mr. O'Brien suggests that it is the product of Lælia grandis crossed with Cattleya guttata Prinzii (amethystoglossa). It was imported from Pernambuco. It has clavate compressed diphyllous stems fifteen inches or more in height; leaves about a foot long and two inches wide; peduncle six to eight inches long,

bearing three to five flowers, each four inches across, in form resembling some of the varieties of Lælia elegans; the sepals and petals creamy-white, tinged with rose, and a few dots of crimson; lip three-lobed, the lateral lobes convolute, white tinged with purple, the front lobe an inch and a half wide, broadly ovate, crisped and wavy, the apex recurved and colored rich amethyst-purple. The hybrid origin of the plant is purely conjectural.

Stauropsis gigantea.—I have a twelve-flowered raceme of this stately Orchid before me as I write, which I recently received from a collection where this and many other somewhat old-fashioned Orchids receive exceptional attention, and are grown with conspicuous success. It is forty-five years since this Orchid was first flowered in England by Mr. Robert Warner, when the plant was known as Vanda gigantea, and although it has been discarded by many in favor of more recent introductions, it is still eminently worthy of a place in every large collection of tropical Orchids. I know a plant a yard high clothed to the base with two series of strap-shaped leathery leaves two feet long, which bears every year a raceme of flowers, each flower two inches across, the segments tongue-shaped, fleshy, creamy-yellow, with pale red blotches, the lip and column comparatively small and inconspicuous. These flowers remain fresh several weeks.

Narcissus Broussonetii.—This is one of the rarest and most interesting of the species of Narcissus. It is scarcely known in English gardens, but I remember reading somewhere that it is successfully cultivated in pots in the United States, and is much appreciated there. A few years ago it was re-introduced to Kew after having been lost to cultivation many years. It flowered, and a figure of it was published in the *Botanical Magazine*, the plants dying soon afterward. Recently a quantity of bulbs of it have again been obtained from Morocco, where it is a native, and another attempt will be made to establish it here. Meanwhile, any information as to its cultural requirements will be welcome. It has long narrow glaucous green leaves, peduncles a foot long, two-edged, bearing umbels of pure white flowers, each over an inch across and remarkable in having the corona almost entirely suppressed. The flowers are fragrant.

Salvia macrostachya is a handsome species, which has long been known to botanists as a common plant in South America, but has never been introduced into cultivation till now. Seeds of it were sent to Kew last year from Quito, and the plants raised were grown outside till autumn, when they were lifted and potted. They are now five feet high, with four-angled stems and large cordate green leaves, eight inches by seven inches, the petioles four inches long. The flowers are in large terminal spikes six inches long by three inches in width, the bracts ovate, over an inch long, green, and the flowers an inch and a half long, bilabiate, and colored lilac-blue. The whole plant is covered with fine silky hairs. As a spring-flowering plant for the conservatory this is likely to prove a useful Salvia. A figure of it has been prepared for publication in the *Botanical Magazine*.

Saxifraga Burseriana.—There is no more charming alpine plant than this when it is grown in pots in a frame and brought into the cool-house in February to flower. In the alpine-house at Kew (which is an unheated span-roofed structure about fifty feet long, with a trellis stage on each side of a central path) there are now many pots of this beside numerous other species of Saxifraga, but S. Burseriana is far the best of them all. Cushions of gray-green six inches across, thickly studded all over with short-stalked pure white flowers as large as primroses, which last a fortnight or three weeks. No plants are more easily managed; little tufts are potted in spring, after the flowers are over, in loamy soil, and pieces of sandstone are placed over the surface of the soil. To these the Saxifrage clings, and in a year or two the whole surface is a conical tuft of gray-green, pretty enough even when not in flower, but a gem among greenhouse plants in February and March.

Trial of New Plants.—I perceive that there is some slight difference between the work done by your experimental stations and that performed by the Royal Horticultural Society at Chiswick, the only place in England where systematically conducted trials of new garden flowers, fruits and vegetables are publicly conducted for the public good. This year the subjects to which attention will be devoted are the following: The committees which adjudicate at the bimonthly exhibitions of plants are summoned to meet at Chiswick whenever any group of plants under trial are ready to be examined. The results of the trials are reported in the journal of the Society and in the gardening papers. Invitations are sent out to nurserymen and others interested, who are requested to send to Chiswick examples of any plants to be tried. These are carefully cultivated by a staff of gardeners under the direction of Mr. A. F. Barron, the superintendent. From the fact that the trials are open to the inspection of the public the merits of new flowers, etc., are not likely to be overlooked, nor on the other hand can inferior novelties escape detection under such a trial. The following is the official programme: The council of the Royal Horticultural Society has decided to make trials this season of the following subjects in the gardens at Chiswick: (1) By the Floral Committee: Cannas, Clematis, bedding Begonias, tree (perpetual or winter-flowering) Carnations, zonal Pelargoniums for pots, Campanulas and Sweet Peas. (2) By the Fruit and Vegetable Committee: Strawberries (all sorts), Cauliflowers, new varieties Tomatoes, new varieties Potatoes and new varieties Peas. Growers and others interested in these plants, seeds, etc., are hereby invited to contribute examples for this purpose, and to be good enough to forward the same to the Superintendent, Royal Horticultural Society Gardens, Chiswick, as early as may be convenient. Full particulars may be obtained on application to the Secretary, the Rev. W. Wilks, Royal Horticultural Society, 117 Victoria Street, S. W.

London. *W. Watson.*

New or Little-known Plants.

Ostrya Knowltoni, a new Species of Hop Hornbeam.

THE Hop Hornbeam of the eastern United States, Ostrya Virginiana (Mill.), Willd., occurs from the Atlantic states westward to the Mississippi Valley, and reaches the south-western limit of its range in the eastern portions of Nebraska, Kansas, Indian Territory and Texas. The discovery of a second species of this genus in the United States will be of interest to all American botanists, and the fact of its geographic separation from Ostrya Virginiana by a distance of nearly a thousand miles gives this discovery additional interest. In the year 1889 Mr. Frank H. Knowlton was occupied in making a collection of the plants of San Francisco Mountain, in northern Arizona, and spent a portion of his time in a side trip to the Grand Cañon of the Colorado. Mr. Knowlton was in the company of a party engaged in a biological survey of the San Francisco Mountain region under the direction of Dr. C. Hart Merriam. The party reached the Grand Cañon at a point known as Cañon Spring, having traversed the road from San Francisco Mountain by the way of Hull Spring and Red Horse Spring. The southern wall of the Grand Cañon at this point is about 1,800 metres in height, and the trail, which leads circuitously from its summit to the river below, is about ten kilometres in length. This long steep slope is cut up by deep lateral cañons, on the cool northern slopes of which, in their higher altitudes, grow the Rocky Mountain Yellow Pine, Pinus ponderosa Scopulorum; the Douglas Spruce, Pseudotsuga taxifolia, and the Rocky Mountain Fir, Abies concolor. On slopes of southern exposure, and even on northern slopes at lower altitudes, is a growth of small forest-vegetation characteristic of the Upper Sonoran zone of the desert, made up of the Nut Pine, Pinus edulis; the Desert Juniper, Juniperus Californica Utahensis, and the Mountain Mahogany, Cercocarpus

ledifolius. In the vicinity of Cañon Spring Mr. Knowlton obtained a specimen of a tree which subsequently proved to be an Ostrya, but which was not at that time in fruit. In 1892 Professor J. W. Toumey, of Tucson, Arizona, botanist of the State University, visited the same locality and obtained fruiting specimens of this tree, which in January, 1894, came into the writer's hands. A technical description is here given:

OSTRYA KNOWLTONI, sp. nov.—A small tree about 4 metres in height; bark of twigs, two years or more old, light gray in color, those one year old cinnamon-brown and glabrescent, those of the current season greenish brown and pubescent; leaves with densely pubescent petiole 4 to 10 mm. in length, the blade broadly oval in outline, obtuse or broadly cuneate at base, acute or in some specimens obtuse at the apex, dentate-serrate, sometimes doubly so,

Fig. 23.—Ostrya Knowltoni.—See page 114.

sparsely pubescent on both surfaces; flowers not seen; fruiting spike ovate to oblong, 2.5 to 4 cm. long, the mature involucres about 2 cm. long, bristly hairy at their insertion; nut ovate-lanceolate, acute, about 6 mm. long, several-nerved on both surfaces, minutely pubescent until full maturity; male spikelets for the succeeding year borne in clusters of 2 to 4 on a pubescent peduncle 5 to 10 mm. long. Type specimen in the United States National Herbarium, collected July 10th, 1892 (No. 272), in Yavapai County, Arizona, within the Grand Cañon of the Colorado River, by J. W. Toumey.

Mr. Knowlton obtained only a single specimen, collected September 10th, 1889, and without fruit, but bearing leaves and the male catkin-buds for the succeeding year. By a microscopical examination of the catkin scales and anthers, when naming the plant collections of the party, I was able to refer the tree definitely to the genus Ostrya, and it was recognized at that time as an undescribed species. The material was so scant, however, that a description was temporarily withheld, but Mr. Toumey's specimens bear mature fruit and render possible a better comparison with O. Virginiana. The leaves in O. Knowltoni are smaller, approximately oval, obtuse or acute, and rarely cordate below; in O. Virginiana larger, oblong-lanceolate, acuminate, and usually with a shallow sinus at the base. In O. Knowltoni three-year-old twigs have a light gray bark, in O. Virginiana a dark reddish-brown bark, and, in these specimens at least, the nut of the former species is minutely pubescent, not glabrous, as in O. Virginiana. It is probable that the flowers and the size, faces and bark of the tree itself will be found to afford other distinctive characters.

The following communication from Professor Toumey, under date of February 5th, 1894, will serve to direct others to the exact station of the original tree, which is, with little doubt, the same specimen from which Mr. Knowlton obtained his material:

The Ostrya, which you inquire further in regard to, and specimens of which were sent to the Department of Agriculture a year ago, was found north of Flagstaff, on the rim of the Grand Cañon of the Colorado River. It is growing at the left, a few rods after beginning the descent to the river over John Hance's trail. The tree is much smaller than its eastern relative and more spreading. I found only the one specimen, which was about twelve feet high, growing with Oak grubs [Scrub Oaks] and Cercis occidentalis. Pinus ponderosa Scopulorum at this place is not infrequent. I remember the tree quite distinctly, as I observed at the time that it differed considerably from the eastern species.

This Hop Hornbeam has been named in honor of Mr. Knowlton, not only on account of his valuable services to the science of botany in general, but to commemorate the zeal with which he carried on his field-work of 1889, in spite of continued ill-health.

Washington, D. C. *Frederick Vernon Coville.*

Cultural Department.

The Best Varieties of Vegetables.

THE following varieties of vegetables have been selected as the best of their class after a careful trial of as many kinds as were available in a soil of sandy loam. To the name of each variety I have added a few of its points of excellence.

BUSH BEANS, GREEN-PODDED.—Early Red Valentine: earliness, productiveness, good flavor and tenderness. Horticultural Dwarf: large pod, long-bearing season and meatiness of pod. Refugee, or Thousand to One: remarkable productiveness, round solid pods, good for pickles as well as for ordinary table use.

BUSH BEANS, WAX PODS.—Black Wax: earliness, clear color, delicate flavor. Improved Golden Wax: productiveness, tenderness and solidity of pod, freedom from rust. Wardwell's Wax: size of pod, vigor of plant, power to resist drought.

BUSH LIMAS.—Henderson's Bush Lima: earliest and most prolific, fine-flavored, but small. Burpee's Bush Lima: a true bush form of the old White Lima, with all its valuable qualities.

POLE BEANS.—Large White Lima: an enormous cropper, vigorous plant and fine flavor. Old Homestead: early and everbearing, large, round, tender pods and peculiarly fine flavor. Golden-cluster Wax: the best of its kind to take the poles, a certain cropper.

BEETS.—Egyptian: earliness and rich crimson color. Eclipse: earliness, fine texture of flesh, handsomely zoned and excellent flavor. Long Smooth Blood: finest color of all, tender and good flavor.

CABBAGE.—Early Jersey Wakefield: first to head, most succulent, good color when cooked. Succession: sure heading quality, compact plant, solid head and tenderness. Late Flat Dutch: uniform header, great density, best keeper, fair flavor.

CARROTS.—Early Horn: earliness, cleanness of root, mildness of flavor. Danvers: heaviness, tenderness of core, fine color and flavor. Long Orange: good keeper, good color, valuable for field or garden culture, but must have a deep soil.

CAULIFLOWER.—Early Snowball: sureness in heading, freedom from green leaves in the flower-head, compactness of plant, pearly color. Large Late Algiers: large size of head, hardiness, lateness of season.

CELERY.—White Plume: earliness, beauty, crispness, flavor. Golden Dwarf: weight of plant, thickness of stem, keeping quality, fine texture. London Red: unequaled nutty flavor, freedom from strings and the best keeper.

SWEET CORN.—Cory Early: earliness, comparatively large ear, tenderness and sweetness. Perry's Hybrid: second early, good ear, sure and abundant cropper, healthy plant. Stowell's Evergreen: large ear, small cob, fine flavor and tenderness. Country Gentleman: small ear, small but deep grain, incomparable in flavor.

CUCUMBERS.—Early Cluster: fruits in clusters, large cropper, small, chunky fruit, good for pickles. Green Prolific: earliness, medium size, good color, the best for pickles and good for slicing. Early White Spine: enormous cropper, long season, fine texture, delicate flavor, little seed, best all-round variety.

EGG-PLANT.—Early Long Purple: good cropper, long narrow fruit, valued for extreme earliness. New York Improved Spineless: productiveness, vigor of plant, size and color of fruit, solidity and unexcelled flavor.

ENDIVE.—Moss Curled: garnishing quality, tenderness and neat curled habit. Green Curled: largest and densest heart, best for spring and autumn. Broad-leaved Batavian: largest plant, broad thick leaves.

KALE.—Green Curled Scotch: fine close curl, compact plant, best for autumn. Siberian: extreme hardiness, mild flavor, can stand out all winter.

KOHL RABI.—Early Short-leaved Vienna: small bulb, very small top, tender, early maturity, can be planted closely, the best for frames. White Vienna: the popular variety, large bulb.

LEEKS.—London Flag: the best for soups, good flavor. Large Carentan: heaviest, best for serving whole.

LETTUCE.—Boston Market: small dense plant, early, delicate flavor. Salamander: ability to resist drought, few outside leaves, large, solid but tender and succulent head. Henderson's New York: largest good variety, does not burn, stands longest without seeding, fairly solid, delicious flavor. Paris White Cos: finest flavor of all, needs to be tied and a moist position.

MUSK MELON.—Jenny Lind: small round fruit, salmon-red flesh, good cropper, best flavored of early varieties. Nutmeg: larger and longer than Jenny Lind, green flesh, early, delicious flavor. Hackensack: heavy cropper, green flesh, fair flavor, the popular variety. Emerald Gem: medium size, deep green shell, good cropper, deep salmon-red flesh, luscious and melting flavor, the best variety for home use,

WATERMELONS.—Cole's Early: the best early for the latitude of New York, medium-sized fruit, delicious flavor. Ice-cream: unexcelled in flavor, fine crimson flesh, small seeds, and one of the surest to fruit. Florida Favorite: large, long fruit, very deep flesh, large heart, thin, tough rind, very prolific.

ONIONS.—Queen: best for pickling, clear waxy-white color, mild in flavor. Early Red Wethersfield: rather flat, large, good keeper, fine flavor. Prizetaker: largest and best for general use, fine globular shape, small neck, solid pulp, delicate flavor and fair keeper. Southport Red Globe, Southport White Globe and Southport Yellow Globe are the very best of their respective colors for keeping qualities as well as in all other good points.

PARSLEY.—Double Curled: sold under various names. Growers should insist on getting seed from good stock, as excellence depends entirely on selection. Emerald: a fine curly variety of the above of a distinct dark green color.

PARSNIPS.—Long Smooth: tapering shoulder, long bulb.

Hollow-crowned: square shoulder, depressed at crown, half-long bulb, very heavy, of the best quality. Short Round: turnip-shaped root, which is rarely used. All the Parsnips I have tested seem to be of about equal value in regard to flavor; a deep mellow, rich soil produces the best roots.

PEAS, in the order of their earliness.—The varieties catalogued as Philadelphia Extra Early, First of All, etc., are selections of the old Daniel O'Rourke type, worked up to various degrees of perfection, every prominent dealer having his own particular stock. The points of merit given apply to the best strains offered by trustworthy seedsmen: Two and a half-feet high, enormous croppers, resist drought well, not wrinkled, but of fair flavor, well-filled pods. American Wonder: one foot, the favorite dwarf variety, densely compact pods, prolific, tender and delicious. Advancer: two feet, second early, vigorous plant, good cropper, admirable flavor. Heroine: two and a half-feet, largest main crop variety, pods five inches long, well-filled with enormous peas of perfect flavor. Champion of England: five feet, the popular tall late variety, very prolific and of good flavor. Telephone: five feet, finest tall late variety, of incomparable flavor. Admiral: three and a half-feet, a promising second early variety, most prolific, small pods literally jammed full of delicious peas.

PEPPERS.—Small Red Chili: small plant and pod, prolific, best for sauces and pickles, very hot. Long Red Cayenne: larger than the above, very pungent, used mostly for pickles. Sweet Mountain: best for mangoes, mild in flavor and a heavy cropper. Golden Dawn: beautiful yellow color, mild, tender, succulent.

PUMPKINS.—Large Cheese: the largest cropper, medium-sized fruit, fine-grained flesh, a favorite for pies and good also for stock-feeding. Calhoun: small variety of the same type, finer-grained in flesh, heavy cropper, the best for pies. Jumbo: the largest variety, sold under various names; it has a delicious flavor.

RADISHES.—Red Forcing: smallest top and tap-root, fair size, bulb matures in twenty-one days. White-tipped Scarlet: best for general crop, good appearance, mild flavor. French Breakfast: olive-shaped, white at base, small tap-root, crisp and sweet. Yellow Summer Turnip: best summer variety, remains solid long, mild flavor. Long Brightest Scarlet: sold under various names, of a vivid scarlet in color, white-tipped at the base and the best long variety.

SPINACH.—Savoy-leaved or Bloomsdale: crumpled leaves, very early, tender and succulent, but runs quickly to seed. Thick-leaved: the heaviest plant, producing large leaves and a dense heart, good for any season, best for fall, very hardy. New Zealand: distinct from the other varieties, growing in bush form and producing thick fleshy leaves all through the season.

SQUASH.—White Bush Scalloped: the best early variety, creamy white, thin shell, fine grain, juicy and excellent in flavor. Bush Summer Crook Neck: fine dry flavor, very prolific. Boston Marrow: best for late keeping, shell orange, very deep dry flesh, good flavor and grand cropper.

TOMATOES.—Lorillard: not the earliest but the first good variety to mature, small rind, very solid fruit, bright scarlet throughout, delightful flavor. Dwarf Champion: strong bushy plant, needing little support, medium-sized fruit, solid, purplish in color. Perfection: best all-round variety, prolific fruit, vivid scarlet flesh, solid, flavor unexcelled, small seed cavity. Ignotum: large fruit, solid and meaty and stands well. Mikado: has corrugated fruit, but very solid, and is one of the heaviest croppers.

TURNIPS.—Red Top Strap-leaf: medium-sized flat bulb, purplish red at the top, white at the base, early, tender, fine-grained. Snowball: pure white, round, early, admirable for the garden. Golden Ball: round, very mild and delicate in flavor and an excellent keeper.

Bloomfield, N. J. *R.*

Snowdrops.

A FEW warm days have encouraged the Snowdrops to venture out, and show plainly that even flowers of such hardihood appreciate genial conditions. The bees were very busy among the expanded flowers on Sunday, March 4th, and the borders were a picture of animation. Nature seems to have her forces always ready for action, but it appears strange that these insects in such numbers should so promptly discover a few flowers in an obscure garden. It is evident, however, that the Snowdrops are very attractive to insects, and if one is to grow seedlings of known pedigree it will be necessary to adopt precautions to prevent the exposure of the flowers. Cross-fertilization often occurs in their natural haunts, if one can judge from collected bulbs.

Snowdrops have greatly interested growers of hardy plants during recent years, for, aside from their beauty and especial value as the first flowers of the year, many fine new forms have been introduced to cultivation. There are now some fifty or more quite distinct forms of Galanthus in cultivation, though some of these are as yet very rare. The Snowdrops are very simple flowers, and it would seem scarcely possible that so many distinct kinds could be distinguished; yet, while they have a close family resemblance, the varieties are easily recognized, and some kinds are strikingly distinct even to the most casual observer. There are varieties, however, which are only distinct in the time of flowering, as G. Octobrensis, a variety of G. nivalis, which blooms in October, and G. Corcyrensis, a variety of the same species flowering in November. They differ from the type only in having a light glaucous line in the channel of the leaf. Both of these varieties are weak growers with me, as our Decembers are too severe for their foliage. The latter variety flowered feebly this year in January, though one of the bulbs given to a friend flowered at the normal time.

Galanthus Elwesii is the earliest Snowdrop of the year, and may be expected any time in January when the weather permits growth. This species is now well known, and is the largest and showiest kind available—that is, which can be secured readily at a moderate outlay. It does not do well everywhere, but when it takes kindly to its position it leaves little to be desired. As collected it varies considerably in size and form. Good examples have petals from three-quarters to a full inch long, and rather broad. Still larger forms are separated, as the variety Major, and there is a form with short broad petals and a closed or globe-shaped bud known as G. globosus. These forms have broader leaves than the type, and seem also more vigorous. The leaves of G. Elwesii are broader than those of G. nivalis, light green and glaucous. The weak point of G. Elwesii is its odor, which is not as agreeable as that of other varieties.

Galanthus Aidin is a new Snowdrop collected last year by Mr. Whittall, to whom I am indebted for my samples. These flowered as early as G. Elwesii and are very promising. They vary somewhat in size and markings, as is usually the case with collected Snowdrops. The flowers are usually of fine size, and in many cases have simply dots of green on the lobes and a green base to the inner petals. Their promise, however, is not so much in the novelty of their flowers as in earliness and prolific bloom. Almost every bulb of the hundred or more grown gave me two flowers, and in many cases there were three. In one instance I found a double-flowered scape, the extra flower having four outer petals. I have also found a bulb with a fasciated scape, with two flowers and a remarkable profusion of extra petals, some of which spring from the pedicel. If they retain this habit they will prove more floriferous than any kind yet tested by me. At the same time Mr. Whittall sent me a lot of large, long-necked bulbs as G. Cassaba. These were so distinct as to lead to visions of something quite unique in the way of flowers. Unfortunately they were rather soft from being a little unripe. The variety cannot be fairly judged as yet; they evidently will prove superior to G. Aidin in robustness and size of flower, but I consider G. Aidin the most valuable acquisition. Both of these are probably varieties of G. Elwesii. Another of Mr. Whittall's varieties, G. Ikariæ, from the island of Icaria, has broad green leaves, Leucojum-like, with flowers of good size and shape. There is still another Asia Minor Snowdrop with small flowers and narrow leaves, light green, and unlike those of G. nivalis. I am also indebted to Mr. Whittall for other specimens which do not yet show striking characteristics, but prove that Asia Minor is rich in Snowdrop varieties. Another Asia Minor Snowdrop sent out by Dammann, G. robustus, is a noble variety, well named. The bulbs are large and flower-scapes very strong. The flowers are large, with petals fairly narrow, making a long bud. These are scarcely as pointed as well-grown flowers of G. Imperati, which is the Italian form of G. nivalis, with highly pleasing flowers larger than the type. The inner petals of these are white, with green markings on the sinus. A large form of this is G. Imperati Atkinsii. This is most striking in the border, being the largest-flowered and tallest of the collection. This variety also sometimes has four outer petals and shows a tendency to produce extra inner ones which are not fully developed. Another form of G. Imperatii is G. Melville major, which is a beautiful form of great purity of color. The inner petals of this variety are without lobes and incurved.

Galanthus Scharlockii is a curious little Snowdrop which has green markings on the tips of the outer petals, and the spathe is divided, branching over like a pair of horns. These spathe

valves have the appearance of leaves and are entirely distinct in character from those of other species, which usually roll up from each side toward the centre, and the thickened parts are joined by the thinnest of membranes, which is yet constant. G. Alleni is a European species named after the genial Snowdrop specialist. It has extremely broad, slightly glaucous leaves, and is strikingly distinct. This form is supposed to be a natural hybrid between G. latifolius and G. Caucasicus, and with them is rather late in flowering. The flower is large, pure in color and of fine form. Mr. Allen's seedling, Charmer, is one of the most effective of the family; the flowers large, pure in color and of great substance; scapes rather short, and inner section the boldest of any of the varieties. G. Fosteri is a broad-leaved species, which has not done well in my garden. This is its third season here and it is weaker than ever. However, it has been well reported upon abroad when grown in good rich garden soil, and probably it needs special cultivation to carry out the promises made for it. G. plicatus, the Crimean Snowdrop, has broad leaves, folded at the edges, which gives it distinctiveness, but the plants have not been long-lived with me. The flowers are not specially noticeable, being quite small. G. Umbricus is a beautiful Italian Snowdrop, which has pointed buds and great purity of color. This variety is still lagging with a few others. There are two forms of Snowdrops recognized with yellow ovaries and yellow markings. I have lost my G. lutescens, so that I am unable to say wherein they differ from the similar forms which are often found among collected bulbs. It is possible, however, that these latter may not retain the livid habit, and their lack of deep coloring is due to some temporary and local cause. G. nivalis, of course, is known to all growers of Snowdrops, and a pretty little flower it is, too, which is more than can be said of the double form.

Elizabeth, N. J. *J. N. Gerard.*

Currants for Market.—Dr. J. B. Ward, of Lyons Farms, New Jersey, gave his experience with Currants at the meeting of the New Jersey State Horticultural Society, which was practically as follows: He prepares the ground as for Strawberries, since the Currants need rich soil. He applies from forty to fifty tons of manure to the acre, makes the soil fine by thorough harrowing and then marks out the rows with a two-horse marker. For the Fay and Cherry Currants these rows are marked seven feet apart, or for the Red Dutch six feet apart would answer. The Fay grows with spreading branches, and if the rows are not seven feet wide too much hand-culture will be needed the second year. The ground ought to be thoroughly cultivated by horse-power three or four times before the fruit begins to develop, since hand-labor is so expensive as to lessen the profits. The plants are set about five feet apart in the rows, where it makes little difference if the plants meet each other. The first application of hellebore, which should be made early and thoroughly, will generally destroy most of the Currant worms, so that a light application once or twice later will thoroughly eradicate them. The hellebore is usually put on dry with a bellows on a damp day. After a shower this must be repeated. "We do little trimming until the third year, when we cut out the old wood so as to leave the best growth, and we repeat this every year. Sometimes we fail to get full clusters, a loss which we attribute to cold winds and damp weather at the time the fruit is setting. When several days of cold, damp weather come about the time the Currants are in bloom, some of the blossoms will blast and the fruit-clusters will be shortened for from one-quarter to one-third of their length. In sheltered places we have obtained long full stems. With proper care a Currant-bush will last ten years and yield from three to five quarts a year. We have grown Fay's Currant entirely, although I would recommend the planting of some Cherry Currants, as well as Versailles."

New York. *S.*

The Earliest Flowering Shrubs.—The first of our shrubs to flower this year is the Daphne Mezereum, which we have in both pink and white colors. There is a honeycomb-like scent to the blossoms, which is very agreeable. Sometimes we have warm spells in midwinter or later, which bring along the flowers of Jasminum nudiflorum ahead of everything else. But the Daphne is first this year, as, at this writing, the first flowers only of the Jasmine are expanded. The Chimonanthus fragrans has been blooming more or less for some time past. Like the Jasmine, Lonicera fragrantissima is often in bloom in midwinter, but at this time, March 12th, it is not out yet. In the herbaceous border, Eranthis hyemalis is in fine bloom, and in the open fields Draba verna and Lamium amplexicaule make a good display.

Germantown, Pa. *Joseph Meehan.*

Correspondence.

A Plea for Wild Flowers.

To the Editor of Garden and Forest:

Sir,—The importance of protecting our forests, wild game and native song-birds is no longer questioned, but the work begun in these directions should include the preservation of beautiful, curious and useful plants indigenous to our woods and fields. In many instances those who could prevent their destruction are indifferent to the rapid disappearance of wild flowers. Among the forces active in this extermination are the woodman's axe, the drainer's spade, the farmer's plow, the herdman's sheep and the collector's trowel. There are other causes of, perhaps, minor importance, which are of too much significance to be entirely ignored. To a more enlightened public opinion, the establishment of Arbor Day and to wholesome legislation we must trust for the preservation of our woods and of the lowly plants that only thrive under their shade. If the farmer's mind were enlarged by broader culture he would spare a few rods of swamp-land as nature dressed it. The Lily would then be allowed to brighten the fence-row, and the Clematis, with its feathery plumes, might be left to drape his fences without subjecting the owner to the charge of shiftlessness. As sheep graze much closer than any other domestic animal, they are peculiarly destructive to plant-life. In many instances they are allowed to graze in woodlands with other stock when they might as well be kept in other pasturage.

The species of wild plants which disappear most rapidly are those possessing, or supposed to possess, medicinal qualities, as the Blood-root, Sarsaparilla, Orange-root and Ginseng. Professional root-diggers gather supplies each succeeding year from the same section as long as the yield is profitable. When they have so nearly exterminated the plant that the gathering no longer proves remunerative, new fields are sought in which to repeat their depredations. It is stated that Ginseng can be cultivated successfully, and the production of Ginseng may yet become a paying business. Many other wild plants also admit of cultivation. I heard complaints last Decoration Day that plants, such as the Trillium, once plentiful in this locality, are now almost exterminated by overgathering. Plant-collectors are charged with being largely responsible for the extermination of wild flowers, and this is, perhaps, true in a way. But, after all, collectors are among the most active agents, indirectly, in perpetuating them; among town and city people by giving an opportunity to buy them, and among country people by awakening them to the fact that native plants are worth money, and, consequently, worth keeping; for many people see no value in anything excepting the cash value.

If wild flowers are to be saved from extermination the people must be educated to understand their beauty and usefulness. Natural plantations in city parks make their value known, and the florist, who is each year adding new species to his stock of native plants, is also a teacher. But there is, perhaps, no better way in which to reach the masses than through the country schools. Teachers should call attention to the marvels of plant-structure and plant-life, and Arbor Day exercises should not be called complete until a bed of wild flowers is made a part of the decoration of the school-yard. The daily study of the plant, its habits and development, will prove an efficient aid in the advancement of elementary science; a source of inspiration that will purify and make nobler the lives of all who come within its influence.

Harmonsburg, Pa. *B. L. Putnam.*

March in a West Virginia Garden.

To the Editor of Garden and Forest:

Sir,—The first work here in the garden in March is to remove the leaves that have been its winter protection. This is an interesting process, as it reveals the wet yellowed grass, which a few days of warm sunshine will turn to green, and the groups of early-flowering bulbs already piercing the mold. The first week of bright, genial spring weather has brought all the early birds. The air is jubilant with the whistlings of the cardinal grosbeak, the chirp of robins and the songs of Carolina wrens, snowbirds, crested titmice and the sparrows. The far-away notes of doves and the call of meadow-larks add a touch of pathos to the general hilarity. Bluebirds are unusually plentiful, and blackbirds have come in full force. Watching the signs of the times, year after year, I have never known the blackbirds to make a mistake in coming too soon, so we take heart of grace and begin to believe that spring is really here.

The warm sun has brought out the Crocuses in royal raiment of purple and gold. Snowdrops in colonies almost sparkle in their pure whiteness here and there amid the gray-green grass, and yesterday one lonely butterfly was flitting about searching for companions and for flowers.

Jasminum nudiflorum has been blooming all winter, yet has kept a store of sunny blossoms to welcome the first week of spring. The earliest fragrant flowers to perfume the winds of March in our garden are those of a Bush Honeysuckle, Lonicera Standishii, which has inconspicuous cream-colored inflorescence coming before the leaves. A group of Japanese Cherries, and another of Flowering Plums are now very interesting, only waiting a few more hours of sunshine to expand their blossoms. The first Periwinkle-flowers stud the lawn, and double Daffodils are laughing in the warm light from their shelter at the feet of a Snowball-bush.

Some Willows show a golden mist, and the Weeping Willows are a faint yellowish green. The bees are released from their winter quarters, and are getting their first taste of fresh bee-bread from the bakeries provided by the Aspen, the pussy Willows and the catkins of the Alders.

Shepherdstown, W. Va. *Danske Dandridge.*

Notes from a Northern Garden.

To the Editor of GARDEN AND FOREST:

Sir,—The subtle changes which reawaken vegetation in this latitude are always interesting and mysterious. The winter season here has been a mild one compared with that of last year. On the 24th of February the thermometer dropped to nine degrees below zero, the lowest point reached thus far during this winter. The next day the wind veered to the south and the weather became decidedly milder. On the 27th of February the first Snowdrop hung out its tiny bell. This was soon followed by others, so that in a few days there was quite a patch of them.

Thus far the weather is remarkably free from March bluster, so that a good many shrubs, bulbs and perennials are beginning to awaken. Jonquils, Hyacinths, Tulips and Daffodils push bravely upward. Crocuses are already quite far advanced and will blossom in a few days. The leaf-buds of the White Lilacs are almost ready to burst, and the rich yellow flower-buds of Forsythia Viridissima and those of Spiræa Thunbergii are beginning to expand. Among the more prominent perennials which have already made leaves are Dicentra spectabilis, Oriental Poppy and Aquilegias.

Last November I sent a few notes to GARDEN AND FOREST (vol. vi., p. 498) describing plants blooming in our garden in mid-November. Had hardy Chrysanthemums been growing there the time might have been extended to Thanksgiving, for a fine specimen of a yellow Chrysanthemum in a neighbor's garden defied the storms of late November. From this year's experience with Snowdrops, it is evident that these flowers, in a favorable season, would be in bloom in the latter half of February, and in sheltered situations, with a southern exposure, probably as early as the middle of the month; we can thus have out-of-door flowers in all but two months of the year, December and January. A little judicious management will provide flowers for three hundred days of the year's calendar.

Overisel, Mich. *H. A. Fortuine.*

Recent Publications.

Richard Jefferies: A Study. By H. S. Salt. Swan, Sonnenschein & Co., London; Macmillan & Co., New York. 1894.

The publication of this little monograph in the Dilettante library, and the issue at the same time of a "large-paper" edition with illustrations of "Jefferies' Land," would seem to indicate that the interest in Jefferies' unique personality shows no signs of abating. Perhaps it is to be expected that the mere thought of that return to nature which is the key-note of his philosophy should appeal with peculiar charm to a world weary of the burden of a civilization, the advance of which knows neither rest nor pause; for it is with the world at large, as with Jefferies himself, the true message of the country can be learned only through life in the city. It was the banished Duke and his worldly courtiers who felt the poetic aspect of life in the forest of Arden. To the natives of the soil, who feeling the full penalty of Adam were forced to earn their bread by the sweat of their brows, life in the forest probably seemed prosaic enough.

Though Mr. Salt's study of Jefferies is evidently a labor of love, it will appeal chiefly to those admirers of Jefferies who regard as prentice-work the picturesque descriptions of country-life, or the poetic interpretation of the familiar beauty of the fields and hedge-rows, which constitute the chief charm for the ordinary reader. Mr. Salt finds the highest manifestations of Jefferies' genius in the impassioned utterances of *The Story of My Heart*, which seems to him the mystic prelude to a fuller revelation of the Divine than has ever yet been given to a mortal. It is a pity that a genuine appreciation of the work of one who, in his nobler moods, wrote as if under the direct inspiration of Nature herself, should so soon degenerate into a cult, for, when this calamity falls upon an author, the weaknesses of character and flaws of workmanship which the kindly critic would wish to ignore, are brought prominently forward and dwelt upon as the qualities most worthy of study and admiration. Such has been Jefferies' fate.

In the first essay, "Jefferies as Man," Mr. Salt touches lightly upon the incidents of his outward life, and dwells at length upon his long struggle with "the three grim giants, disease, despair and poverty," which was borne so heroically until death came to his relief. In proportion as we feel the pathos of this brave struggle with an untoward fate, we resent the insinuation that Jefferies' genius was due to his mysterious disease; that he was, in fact, a marked victim of hysteria, "which," in the language of his American physician, "if it has its debasements, has also its exaltations," and "as there was one apocalypse on the island of Patmos, so there was another on the silent hill-top at Wiltshire, and both are alike incomprehensible." But though the inner meaning of the apocalypse at Patmos may be incomprehensible, its glory lies in the vision of the tree of life, the fruit of which is for the healing of the nations, while the one recurring note of Jefferies' revelation is deep and passionate regret that he cannot absorb into his own soul all the life and beauty and joy which he feels throbbing everywhere throughout the universe. It is but Faust in a new form, a passionate protest against the limits of the finite. No sane man wastes his strength in beating against the bars of the prison-house. He finds both the power to rest and the power to work through wise submission to the laws which govern nature and human life. It is only the weak man who glories in revolt. We agree with Mr. Salt in thinking that the feverish unrest and morbid craving for sensation, which are the key-note of the story, were due to the weakness engendered by illness. The strength and sanity of his genius are manifest in the series of essays which he contributed from time to time to the English magazines. In these word-paintings of country-life we find a richness and depth of coloring, combined with a warmth and delicacy of expression, possible only to one who holds his gift in subjection to the rules of art.

As a man he never acquired that calmness which was his ideal of nature. Here it is interesting to contrast him with Thoreau, with whom he had much in common. Thoreau's constant delight in nature owed its strength and intensity to self-discipline, Jefferies' to self-abandonment; hence the one found peace and happiness in the contemplation of her beauty, the other that turmoil and unrest which too surely follow the intoxication of passion.

In Mr. Salt's estimate of Jefferies' gifts as naturalist and as poet-naturalist we heartily coincide. In his chosen field Jefferies has no rivals and few equals, and we can well believe that his descriptions of the fauna and flora of his native country will have a permanent historical interest, such as attaches to White's *Selborne*.

Mr. Salt's manual is furnished with a complete bibliographical appendix, in which the reader will find, not only a list of Jefferies' publications, but a catalogue of all the books and critical reviews of which he is the subject.

Notes.

The beautiful Crape Myrtle, Lagerstrœmia Indica, is reported by Mr. J. K. Small as now well established in Georgia, about Stone Mountain, in De Kalb County, where it blooms at an elevation of 1,000 feet about the second week in July.

Besides the original importation of the new Cypripedium Charlesworthii, 500 plants were lately offered by Hugh Low & Co., while another lot has already been distributed by the Messrs. Lewis, so that we may expect that the plant will be flowering extensively during next season. Orchid-growers will watch it carefully for distinct varieties.

We have received a photograph of an exceptionally well-flowered Angræcum suquipedale, grown at Talbot House, in Edinburgh. It is a single, unbranched plant with ten pairs of leaves and eighteen perfect flowers, all fully open. This grand Madagascar Orchid is said to be badly affected by the winter fogs around London, otherwise it is not a difficult plant to manage.

Unusually warm and bright weather have made the past week a trying one for florists who were preparing plants to be in their best bloom at Easter. The plants have come on so rapidly that it is difficult to keep them back by any ordinary devices for shading and the admission of cool air. In some cases the plants have had to be hurried into market, and florists' windows of this city are now exceptionally beautiful.

In some small towns in the south-western states planks from twelve to twenty inches wide are laid flat on the ground, end to end, to serve as sidewalks. Almost any kind of wood lying on the damp earth with its upper face exposed to the hot sun will soon curl up, but the *Southern Lumberman* asserts that planks of Bald Cypress which have been treated in this manner show no depression when tested by a straight-edge, except that which is due to the wear from the feet of pedestrians.

Mr. Albert M. Herr writes to the *American Florist* the timely advice that with the coming of bright spring days all the ventilation that is possible should be given to Carnations. It will pay in houses that are not arranged for ventilation both at the top and the sides to take out every alternate glass near the bottom and arrange so that it can be quickly put back. A free circulation of good fresh air all around is essential in mild spring-like days if Carnations are to be kept in a vigorous blooming condition.

In the second paper on the History of Orchid Cultivation, contained in the last number of the *Orchid Review*, among other interesting facts it is stated that our North American Orchis spectabilis was introduced into England by Francis Masson in 1801. The Rattlesnake Plantain (Goodyeara pubescens) appeared there a year later and is credited to the Duke of Kent. Calypso borealis and some of the Habenarias were introduced three years later, and the odd little Ram's Head Lady Slipper (Cypripedium arietinum) was introduced in 1808.

Recent arrivals of California oranges have not been in satisfactory condition, but they now command good prices, since the end of the Florida season is in sight. There are no first-class Navel oranges now to be had here, and the last Tangerines of the season are of inferior quality. A few Mandarins are coming from Italy, although the supply of oranges from the Mediterranean ports is considerably smaller than it was at the corresponding season last year. Prices generally rule higher than they have done. For the first time this season good Florida oranges have commanded five dollars a box.

With a view to suggest some practical way of overcoming the difficulties which many growers find in cultivating Phalænopsis, Mr. W. T. Lefebre writes from the Java Botanical Gardens a letter, which is published in a recent number of the *Gardeners' Chronicle*. From a large experience in cultivating these Orchids and studying them in their wild state, Mr. Lefebre sends the following hints: In places where Phalænopsis is abundant the temperature never exceeds seventy-five degrees at night. Most plants bloom from October till May, and some do not stop flowering at all during the dry months. The trunks to which their roots cling are amply mossed and the atmosphere is moist. A single handful of rotted leaves, bark, etc., is sufficient for a whole group. They are partially shaded for a few hours daily in the morning, and they bear sunshine very well.

Since the fires which have raged among the Exposition buildings and the general dismantling of the place, Jackson Park has become something like an extensive ruin. We are glad to learn that Messrs. Olmsted, Olmsted & Eliot have been engaged to make a design for restoring the grounds to their original use as a city park. Many years ago, Messrs. Olmsted & Vaux made a design for Jackson Park which was never carried out, and since the Art Building will probably remain as a permanent feature, while the excavations for the lagoons and canals for the Exposition were necessary departures from the original plan, it is probable that the new design for the park will differ very essentially from the one first made.

An English correspondent writes to complain that Caladiums, Gloxinias and Crotons are spoken of as "greenhouse plants" in American horticultural journals. It is true that we use the term greenhouse in a more general sense than it is used in England, where it is only applied to the cool house, or, as it is sometimes called, the temperate house. The term warm greenhouse is used in England as the equivalent of intermediate house, that is, a house whose temperature is between that of the tropical and temperate houses, but it is never applied to the tropical house or stove. In this country the term greenhouse often includes all glass houses in general, and when this fact is understood no confusion need follow, for whenever it is necessary to make the distinction the special names of tropical house and intermediate house, etc., are used.

At the meeting of the New Jersey State Horticultural Society last winter, Mr. Charles L. Jones, the Treasurer, in speaking of the profit of quince-growing, said that in a small way he had grown this fruit for twenty years with excellent success, and had experienced no trouble with borers or with fungus diseases. Until three years ago he gathered from six to eight baskets from each tree, and then the curculio attacked them, and he has not been able to overcome this enemy. Every quince has been taken. This year he did not get a dozen good ones. The market is very limited, and although they have been sold at times for from $4.00 to $6.00 a hundred, this winter they could have been purchased for any price that was offered. There is very little demand for quinces except for preserving and making jelly, and it does not seem advisable for any one to plant them in large quantities.

At the beginning of the fifteenth century the Rose appears to have been in extensive cultivation. Sir William Clopton granted to Thomas Smyth a piece of ground called Dokmedowe, in Haustede, for the annual payment of a Rose to Sir William and his heirs, at the nativity of St. John the Baptist, in lieu of all services, dated at Haustede on Sunday next before the Feast of All Saints, 1402. In explanation of this deed it may first be observed that ancient deeds are often dated on a Sunday, being executed in churches and churchyards for the greater notoriety; in the second place, the Rose was then in much more extensive use in cultivated society than it is now, when its place is partly occupied by the great variety of other flowers now in cultivation. The demand for Roses was formerly so great that bushels of them were frequently paid by vassals to their lords, both in France and England. The single Rose, paid as an acknowledgment, was the diminutive representation of a bushel of Roses; as a single Pepper-corn, which is still a reserved rent, is of a pound of Pepper-corns, a payment originally of some worth, descending by degrees to a mere formality.

Last year the National Rose Society of Great Britain, in revising their catalogue, formed a new class of Roses under the title of Hybrid Teas. Among the principal varieties which have been removed from among the Hybrid Perpetuals and are now classed as Hybrid Teas are Augustine Guinoisseau, Captain Christy, Caroline Testout, Cheshunt Hybrid, Danmark, Duchess of Albany, Grace Darling, Gloire Lyonnaise, Gustave Regis, Kaiserin Augusta Victoria, Lady Henry Grosvenor, Lady Mary Fitzwilliam, La France, Reine Marie Henriette and Viscountess Folkestone. There seems to be much diversity of opinion among rosarians as to this new classification. Some of them insist that a strict definition of a Hybrid Tea should be given. They ask whether it makes any difference, when there is a cross between a Tea Rose and a Hybrid Perpetual, which one is the seed parent and which the pollen parent. They ask how large a proportion of Tea blood is necessary to make a Hybrid Tea. As to La France, for example, they ask for some definite knowledge as to its parentage, since it does not resemble a Tea Rose in wood or foliage. Certainly, there are difficulties to be met in this classification, and yet the class of Roses which have been produced by directly crossing Hybrid Perpetuals with Teas, no matter which one may be the seed parent, seems to deserve some distinct name.